

<b>Notice of Allowability</b>	Application No.	Applicant(s)
	10/625,933	WOMER ET AL.
	Examiner Victor J. Taylor	Art Unit 2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 24 July 2003.
2.  The allowed claim(s) is/are 15-39.
3.  The drawings filed on 24 July 2003 are accepted by the Examiner.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None
 of the:
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of
 Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

#### Attachment(s)

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 8
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

## DETAILED ACTION

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with Guy McClung Reg. No. 29,008 on March 23, 2005.
3. The application has been amended as follows:
  - I. In the claims filed on 24 July 2003, cancel claims --- 1-14 ---
  - II. In claim 37 and in the first line, delete --- The method --- and in claim 37 in the first line insert --- The computer readable medium --- in place of the deletion.
  - III. In claim 38 and in the first line, delete --- The method --- and in claim 38 in the first line insert --- The computer readable medium --- in place of the deletion.
  - IV. In claim 39 and in the first line, delete --- The method --- and in claim 39 in the first line insert --- The computer readable medium --- in place of the deletion.
4. The above examiner's amendment was made per the applicant's instruction in the interview summary of March 23, 2005.
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor Taylor whose telephone number 571-272-2281. The examiner can normally be reached on 8:00 to 6:30 PM.

***Drawings***

6. The drawings were received on 9 September 2004. These drawings are approved.

**Prior Art**

7. The prior art made of record and not relied upon is considered pertinent to applicant.

I. Art A of Leggett et al., US 6,088,294 in class 367/025 is cited for the drilling system MWD for determining parameters of interest in the borehole and controlling the drilling direction. He teaches apparatus for determining the bed boundaries surrounding the borehole 10 and performs computation down hole with the computing system to correlate the acoustic measurements and transmits selected correlated information up hole in figure 1. He discloses the control unit 40 and the display 42 used to control the draw works 30 and the drilling parameters 59. He further teaches a drilling system using the stored models and data used to control and navigate the drilling along the desired wellbore profile in lines 55-65 column 5 and 6.

II. Art B of Niedermayr et al., US 6,820,702 in class 175/057 is cited for the automated method and system for recognizing well control events for determining a state of drilling operations and teaches a benchmark for a relative flow value of drilling mud into and out of the well bore and teaches event recognition 86 used to control the drilling operation 250 and automatically control the drill parameters 82 in figure 2. He

teaches the automatic method for recognizing well control events in lines 35-65 of column 1.

***Allowable Subject Matter***

8. Claims 15-39 are allowed. The applicant canceled claims 1-14.
9. The following is an examiner's statement of reasons for allowance:
  - I. The method for controlling operation of a drilling rig having a control system in claim 15 with computer computations forming a neural network for controlling the drilling rig with method step limitation for "programming the control management system with at least one resource module associated with at least on set of operating parameters with at least one resource module having at least one operating model having at least one set of programmed operating rules related to the at least one set of operating parameters" ...[and] with steps of "providing an authenticating hierarchical access to at least one user to the at least one resource module" ...[and] with steps for "allowing at least one user to input and adjusted value for at least one of the set of operating parameters in the at least one resource module" ...and/or in combination with the steps wherein "comparing the adjusted value to the said at least one set of programmed operating rules and allowing adjustment if the adjusted value is within the operating rules" ...and in combination] with "providing the indication if the adjusted value is not within the operating rules" ...[and with] the steps for providing the supervisor override to prevent the acceptance of the adjusted value" to produce the monitored controlling operation of a drilling rig is not found in the cited art of record.

The prior Art A of Leggett et al., teaches the drilling system MWD for determining parameters of interest in the borehole and controlling the drilling direction. He teaches the apparatus for determining the bed boundaries surrounding the borehole 10 and performs the computer computation down hole using the computing system to correlate the acoustic measurements and transmits the selected correlated information up hole in figure 1. He discloses the control unit 40 and the display 42 used to control the draw works 30 and the drilling parameters 59. He further teaches a drilling system using the stored models and data used to control and navigate the drilling along the desired wellbore profile in lines 55-65 column 5 and 6.

The prior Art B of Niedermayr et al., teaches the automated method and the system for recognizing well control events used for determining a state of drilling operations and teaches using a benchmark data for a relative flow value of drilling mud into and out of the well bore and teaches the event recognition 86 used to control the drilling operation 250 and to automatically control the drill parameters 82 in figure 2. He teaches the automatic method for recognizing well control events in lines 35-65 of column 1.

Therefore, the prior art Leggett et al., and The prior art of Niedermayr et al., in combination or alone does not teach the present limitation of the claimed combination limitation.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

Claims 16-25 are dependent on the allowed independent claim 1 and are allowed at least for the reasons cited above.

II. The computer readable medium in claim 26 containing the instructions that when executed cause a processor to control the operation of a drilling rig according to the method in claim 15 with readable hardware for “programming the control system with at least one resource module said at least one resource module having at least one operating model having at least one set of programmed operating rules related to the at least one set of operating parameters”...[and] with steps for “providing an authenticating hierarchical access to at least one user to the at least one resource module” used to produce the monitored controlling operation of a drilling rig is not found in the cited art of record.

The prior Art A of Leggett et al., teaches the drilling system MWD for determining parameters of interest in the borehole and controlling the drilling direction. He teaches the apparatus for determining the bed boundaries surrounding the borehole 10 and performs the computer computation down hole using the computing system to correlate the acoustic measurements and transmits the selected correlated information up hole in figure 1. He discloses the control unit 40 and the display 42 used to control the draw works 30 and the drilling parameters 59. He further teaches a drilling system using the stored models and data used to control and navigate the drilling along the desired wellbore profile in lines 55-65 column 5 and 6.

The prior Art B of Niedermayr et al., teaches the automated method and the system for recognizing well control events used for determining a state of drilling

operations and teaches using a benchmark data for a relative flow value of drilling mud into and out of the well bore and teaches the event recognition 86 used to control the drilling operation 250 and to automatically control the drill parameters 82 in figure 2. He teaches the automatic method for recognizing well control events in lines 35-65 of column 1.

Therefore, the prior art Leggett et al., and The prior art of Niedermayr et al., in combination or alone does not teach the present limitation of the claimed combination limitation.

It is these limitations expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

Claims 27-39 are dependent on the allowed independent claim 1 and are allowed at least for the reasons cited above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor J. Taylor whose telephone number is 517-272-2281. The examiner can normally be reached on 8:00 to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 571-272-2863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VJT  
  
March 23, 2005

  
John Barlow  
Supervisory Patent Examiner  
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